

## REMARKS

By this amendment, Applicants have amended independent claim 1 to positively recite the steps of the method, and have amended claim 2 to be in dependent form so as to depend from claim 1. Applicants have added claims 8-10 corresponding to claims 7, 3 and 4, respectively, but dependent upon claims 6, 2 and 2, respectively.

Amended claim 1 now defines a two step method.

The first step is "measuring, at the bottom of said riser, the flow rate variation with time of the gas phase of the circulating fluids." The bases for the first step are given page 17. The "above quantity" (line 17) is the quantity given by the equation line 14. This quantity is called (line 14) "a flow rate" and is denoted " $Q(t)$ " (line 15). Then "measuring at a time  $t_1$  the above quantity" means "measuring the flow rate variation with time at the bottom of the riser."

The second step is "injecting at the base of the riser a volume of gas substantially proportional to the said flow rate variation with time, when this variation is positive." The bases for this second step are:

- A volume of gas is injected at the foot of the riser (page 20, line 20),
- The volume of gas injected is  $u(t)$  (page 21, line 1).
- This volume depends on  $Q(t)$  (see page 21, line 1 and page 17, lines 14-15).
- Concerning the wording "when this variation is positive," it refers page 23, line 18, and the understanding of this characteristic can be found in the equations page 21, lines 1 and 20: if the flow rate of the gas phase ( $q'$ ) is negative, the maximum between the flow rate (or the flow rate minus a positive ratio) and zero is zero. And according to these equations, the

volume injected ( $u(t)$ ) will be this maximum, i.e., zero. So in the claim, we claim the injection of a volume of gas, that is we are in the condition of a  $u(t) > 0$ , that is a positive variation of the flow rate variation.

In view of the foregoing amendments to claim 1, it is submitted claims 1-5 do not omit any necessary steps and comply with the requirements of 35 U.S.C. 112, second paragraph. Therefore, reconsideration and withdrawal of the rejection of claims 1-5 under 35 U.S.C. 112, second paragraph, are requested.

Claims 5-7 stand rejected under 35 U.S.C. 112, first paragraph. In support of this rejection, the Examiner alleges that lines 13-18 on page 4 (sic – 23?) describe the gas injection means 1 connected to the “base of the riser 2,” while (Figure 24) shows element 1 is connected to element 3, not element 2. Applicants traverse this rejection and request reconsideration thereof.

Page 23, lines 13-18 are consistent with Figure 4 in that they describe “gas injection means 1 connected to the base of the riser, means 2 for measuring the flow rate of the gas phase of the circulating fluids, and a computer 3 intended to control injection, through injection means 1, a volume of gas proportional 2 and preferably substantially close to the flow rate variation with time of the gas phase of the circulating fluids, when this variation is positive.” Thus, in both page 23, lines 13-18 and Figure 4, the computer 3 is connected to the injection means 1, and the means 2 for measuring the flow rate of the gas phase of the circulating fluids is connected to the computer 3. The riser is not shown in Figure 24; element 2 in Figure 24 does not designate the riser but the means for measuring the flow rate of the gas phase of the circulating fluids. Accordingly, the description at page 23, lines 13-18 is consistent with Figure 24 and provides support for the invention set forth in claims 5-7.

For the foregoing reasons, reconsideration and withdrawal of the rejection of claims 5-7 under 35 U.S.C. 112, first paragraph, are requested.

Claim 1 stands rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,367,566 to Hill. Applicants traverse this rejection and request reconsideration thereof.

Hill discloses a method to prevent blowout. This method is based on an inner hydrodynamic control casing an outer annulus located between the inner hydrodynamic control casing and an outer casing, and a partial barrier. As explained in the references cited by the Examiner, the aim of this method is to deviate the gas bubbles. The method is clearly explained by claims 1 and 2 from Hill. In this method a fluid is injected. In the present invention, a gas is injected. In Hill's method the fluid is injected at the top of the riser. In the present invention, the gas is injected at the bottom of the riser.

In Hill, the flow does not concern the measurement of the flow rate as in the present invention. In Hill, the flow concerns the fluid. In the present invention, the measurement of the flow rate variation with time concerns the gas phase of the circulating fluids.

To summarize, the aim of the method from Hill is to deviate the gas bubbles. In contrast, this aim of the invention is to prevent the formation of gas bubbles, by injecting a determined quantity of gas.

Hill does not disclose a measurement of the flow rate variation with time of the gas phase of the circulating fluids at the bottom of the said riser.

Hill does not disclose injecting at the base of the riser a volume of gas substantially proportional to the said flow rate variation with time, when this variation is positive.

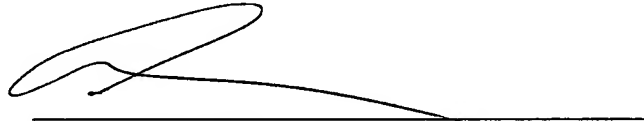
Applicants note the Examiner has cited a number of additional documents as being pertinent to Applicants' disclosure. However, since these documents were not applied in rejecting claims formerly in the application, further discussion of these documents is deemed unnecessary.

In view of the foregoing amendments and remarks, favorable reconsideration and allowance of all of the claims now in the application are requested.

To the extent necessary, applicants petition for an extension of time under 37 CFR 1.136. Please charge any shortage in the fees due in connection with the filing of this paper, including extension of time fees, to the deposit account of Antonelli, Terry, Stout & Kraus, LLP, Deposit Account No. 01-2135 (Case: 612.41302X00), and please credit any excess fees to such deposit account.

Respectfully submitted,

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